



UNC CHARLOTTE

The WILLIAM STATES LEE COLLEGE of ENGINEERING

# Senior Design Newsletter

Vol. 5, No. 5, March 2012



Personal Hovercraft Project from December 2011 Expo

## Spring Projects have Sprung!

This January we kicked off 23 projects and we are ecstatic to see all the new projects that will be worked on this year.

PROJECT NAME	COMPANY
Laser Scanner with iPad Control	UNC Charlotte
Solar Cellphone Charging Hub	UNC Charlotte
Pallet Jack for Grigg Hall	UNC Charlotte
Automatic Artifact 1	Manufacturing Labs Inc
Dry Cask Storage of Spent Nuclear Fuel	URS
Chariots for Disabled Children	Chariots of Freedom
Hand Held Magnetic Dust Removal Brush	NASA
Powered Exoskeletal Shoulder Assistive Device	UNC Charlotte
Automated Artifact 2	Manufacturing Laboratories, Inc
Chariots for Disabled Children 2	Chariots of Freedom
METSO Biogas 2	M ETSO Power
Case for DP Generator	Discovery Place
Development of Small Scale Wind Turbine Blades using Hybrid Fiber Compositers	UNC Charlotte



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Metal Organic Chemical Deposition Growth of ZnO	UNC Charlotte
Wide Bandgap Materials and Devices	UNC Charlotte
Micro Scale Wind Turbine Development	EPIC
FSAE Carbon Fiber Layup Program	UNC Charlotte MS
FSAE Suspension / Chassis Design	UNC Charlotte MS
FSAE Engine Team Spring 2012	UNC Charlotte MS
Stirling Engine Development	UNC Charlotte
Expander and Compressor for IPAC	UNC Charlotte
Einstein Refrigerator	Student
Spectral Images	UNC Charlotte
Distance Ed	UNC Charlotte

## Call for Fall 2012 Projects!!

Missed the deadline for a spring 2012 start? No worries, we are currently accepting project descriptions until July 1 for the fall 2012 semester. Forms and instructions are available on our website at: [www.srdesign.uncc.edu/company-information.html](http://www.srdesign.uncc.edu/company-information.html). It's never too late to submit a project and it has never been easier to propose a project! Use the on-line project request form on the PROJECTS page on our website that asks for all the information we need.

## ISL Director Announces Retirement!

On February 1<sup>st</sup>, Bill Heybruck notified Dean Johnson of his intent to retire as of September 1<sup>st</sup>. To avoid an interruption of the program, we are currently accepting applications for the position. If you know of anyone interested in applying, please have them do so on the UNC Charlotte website: [https://jobs.uncc.edu/applicants/jsp/shared/Welcome\\_css.jsp](https://jobs.uncc.edu/applicants/jsp/shared/Welcome_css.jsp). The position is located in the Faculty section and a job description is provided.

## Active Project Design Reviews

Current projects will be having their design reviews as follows:

- Prototype Review Presentations (2<sup>nd</sup> semester projects) 2/24 and 3/2, please see detailed schedule below.
- Conceptual Design Reviews (1<sup>st</sup> semester projects) 3/23 and 3/30, schedule still in progress.

As always, the design reviews are open to all interested individuals. After reviewing the schedule below, if you are able to attend, please email Bill Heybruck so we can ensure you receive a parking token. For those who are able to attend, we may ask for you to give feedback utilizing a scoring sheet. Project descriptions can be found on our website ([www.srdesign.uncc.edu](http://www.srdesign.uncc.edu)).

## Mark your calendar for our spring/summer 2012 Senior Design dates:

February 24, and March 2, Fall Projects Prototype Review Presentations  
March 23 and March 30, Spring Projects Conceptual Design Reviews  
May 3, Spring Senior Design EXPO  
July 1, Deadline for Fall Project Submissions



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## Need More Information or Have Questions?

Check out our website <http://www.srdesign.uncc.edu> or contact Bill Heybruck at 704-687-2934 ([wfheybru@uncc.edu](mailto:wfheybru@uncc.edu)). Please REPLY with “REMOVE” if you would not like to receive future issues.

### Project Design Review Schedule (2<sup>nd</sup> Semester Projects):

Project name	PRP Date	PRP Time	PRP ROOM
Prognostics of Switch Mode Power	2/24/2012	8:00 AM	Woodward 106
IEEE SoutheastCon 2012 Hardware competition team1	2/24/2012	8:25 AM	Woodward 106
Electromagnetic Propulsion	2/24/2012	8:50 AM	Woodward 106
Water Intrusion Prevention	2/24/2012	9:15 AM	Woodward 106
Negative Capacitance/Inductance Integrated Circuit	2/24/2012	9:40 AM	Woodward 106
Pipe-Traversing Robot	2/24/2012	10:05 AM	Woodward 106
Improving Electrical Distribution System (EDS) in Nuclear Power Plant Utilizing ETAP - Post Fukushima Study	2/24/2012	8:00 AM	CHHS 124
Solar Traffic Light	2/24/2012	8:25 AM	CHHS 124
Predictive Technologies and Service Life of Electronic Components	2/24/2012	9:15 AM	CHHS 124
FSAE Drivetrain	2/24/2012	8:00 AM	Duke 227
Telemetric Transmission Bearing	2/24/2012	8:25 AM	Duke 227
Biomass Gasification	2/24/2012	8:50 AM	Duke 227
Electron Beam Induced Deposition in SEM: Setup and Test	2/24/2012	9:15 AM	Duke 227
Automatic Clutch for FSAE	2/24/2012	9:40 AM	Duke 227
FSAE Engine	2/24/2012	10:05 AM	Duke 227
Energy Education Project for High Schools	2/24/2012	8:00 AM	Smith 203
Nanofluids Flow and Heat Transfer	2/24/2012	8:25 AM	Smith 203
Cooling Water Intake Structure Modification	2/24/2012	8:50 AM	Smith 203
Tidal Power Generator II	2/24/2012	9:15 AM	Smith 203
Motor Test Fixture with variable shaft loads	2/24/2012	9:40 AM	Smith 203
Working Model of Gen III Nuclear Plant	2/24/2012	10:05 AM	Smith 203
AutoLube for Conveyor System	2/24/2012	8:00 AM	Duke 259
NASA Student Launch	2/24/2012	8:25 AM	Duke 259
FAS Assembly Machine	2/24/2012	8:50 AM	Duke 259
Feedwater Heater Rigging and Removal	2/24/2012	9:15 AM	Duke 259
Turbine cover Fixture	2/24/2012	9:40 AM	Duke 259



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Plating Bath Sensor Development	2/24/2012	10:05 AM	Duke 259
Video Inspection System for Bonded Seals	2/24/2012	8:00 AM	Smith 218
Pedestrian Safety Alert System 1	2/24/2012	8:25 AM	Smith 218
Pedestrian Safety Alert System 2	2/24/2012	8:50 AM	Smith 218
Assembly Line Automation	2/24/2012	9:15 AM	Smith 218
VFD driven variable hydraulic pump performance testing	2/24/2012	9:40 AM	Smith 218
Neural Network Algorithm Development and Test	2/24/2012	8:50 AM	Cameron 213
Plastic Bottle Recycler 1	2/24/2012	9:15 AM	Cameron 213
Plastic Bottle Recycler 2	2/24/2012	9:40 AM	Cameron 213
Grid-Connected Renewable and Modular Micro-Source for Smart Grid Applications	3/2/2012	8:00 AM	Woodward 106
Prognostics and Remaining Life Estimation for Switch-Mode Power Converters	3/2/2012	8:25 AM	Woodward 106
Maximizing Efficiency of Solar Arrays via Dynamic Control of Panel Interconnects	3/2/2012	8:50 AM	Woodward 106
Pet Locator	3/2/2012	9:15 AM	Woodward 106
Medical Remote Monitoring System	3/2/2012	9:40 AM	Woodward 106
Propane Tank Weight Monitoring Scale	3/2/2012	10:05 AM	Woodward 106
Multiple Axis Cartesian Robot	3/2/2012	8:00 AM	Duke 227
BMW M42 Turbo	3/2/2012	8:25 AM	Duke 227
BAJA Overall	3/2/2012	8:50 AM	Duke 227
FSAE Chassis	3/2/2012	9:15 AM	Duke 227
Winding Drum Handler	3/2/2012	9:40 AM	Duke 227
BAJA Gearbox	3/2/2012	10:05 AM	Duke 227
Beach Wheelchair	3/2/2012	8:00 AM	Smith 204
Improving Clamping Efficiency of a OHBC	3/2/2012	8:25 AM	Smith 204
Hydraulic UTM Upgrade	3/2/2012	8:50 AM	Smith 204
NASA Lunabotics Competition	3/2/2012	9:15 AM	Smith 204
Self Burying Asteroid Anchor	3/2/2012	9:40 AM	Smith 204
AFOSR Challenge-Climbing Assist Team A	3/2/2012	10:05 AM	Smith 204

For a campus map visit: <http://facilities.uncc.edu/design-services/campus-maps/campus-maps>